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Commercial Standardization of Instrument Testing of Cotton: Overview of Laboratory Development in the Regions

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ICA International Quality Testing and Research Centre Bremen



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Importance of Instrument Testing

- Application areas for instrument testing on cotton
 - Breeding → testing → cotton improvement
 - Growing → high volume testing / every bale → equitable price for farmers
 - Ginning → testing → process optimization
 - Trading → high volume testing / every bale → price for crop; homogeneity
 - Processing → (high volume testing / every bale) → settings
→ homogeneity/bale laydown
- Manual classification is the traditional basis for trading cotton
 - Not sufficiently objective, reliable
- Mainly cotton producing countries are shifting to 100% instrument testing
 - USA, Uzbekistan, Australia, Greece, Spain, Colombia, South Africa, Israel
 - China (60%), Brazil (75%), Zimbabwe (50%)
 - Worldwide estimated 47% of bales instrument tested on producer level [ICAC]

Topic of this Presentation

Question: What is the current status of instrument testing in the cotton production regions in Africa?

- Status?
- Development?
- Internationally comparable?
- Are the developments solely initiated by this project (→ no demand of the countries)?
- Is instrument testing assisted by this project?

These questions have to be answered country by country. With this, general conclusions can be given.

Questions

Region	
Country	
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	
Responsible Organisation for classification / testing	
Other laboratories	
Resp. Org.: Laboratory installed	
Laboratory operational	
Current use of SITC results	Research; Production overview; Production improvement; (Ginners); Assorting lots; Global pricing; Direct Marketing, Payments to farmers; Cotton processing
Planned use of SITC results	dto
Development during Project Time	
Direct project support given by / (offered by)	CFC/ICAC/33; other CFC; UNIDO; others
Kind of direct support	Remark: Direct project support was given based on a questionnaire and co-financing and actual installations Remark: Small support was given to all countries/labs, except where not necessary: Temperature / humidity sensors, calibration material → not mentioned for each country
Perspective / Comments	

Countries

East / Southern Africa

Egypt

Zimbabwe

Tanzania

Zambia

Sudan

Ethiopia

Mozambique

Malawi

Uganda

Kenya

South Africa

Madagascar

Burundi

Rwanda

Mauritius

Swaziland

Lesotho

West / Central Africa

Burkina Faso

Mali

Benin

Côte d'Ivoire

Nigeria

Cameroon

Chad

Togo

Senegal

Ghana

Centr. Afric. Rep.

Guinea (Rep.)

Congo, DR

Niger



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EAST / SOUTHERN AFRICA

Region	East/Southern
Country	Egypt
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	130
Responsible Organisation for classification / testing	CATGO
Other laboratories	Research (CRI); Processing (several)
Resp. Org.: Laboratory installed	Yes
Laboratory operational	Yes
Current use of SITC results	?????
Planned use of SITC results	?????
Development during Project Time	Full routine operation given Participation in CSITC RTs
Direct project support given by / (offered by)	
Kind of direct support	
Perspective / Comments	Routine operation

Region	East/Southern
Country	Zimbabwe
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	95
Responsible Organisation for classification / testing	Agr. Market Authority; Cottco / prv. Companies
Other laboratories	Production (OLAM)
Resp. Org.: Laboratory installed	Yes
Laboratory operational	Yes
Current use of SITC results	Direct marketing
Planned use of SITC results	
Development during Project Time	Routine operation Participation in CSITC RTs
Direct project support given by / (offered by)	CFC/ICAC/33 full support
Kind of direct support	Support to instrument /conditioning
Perspective / Comments	Routine operation, 100% instrument testing

Region	East/Southern
Country	Tanzania
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	90
Responsible Organisation for classification / testing	TCB
Other laboratories	Control (WIS), RTC
Resp. Org.: Laboratory installed	Yes
Laboratory operational	(Yes)
Current use of SITC results	Production overview; information for ginnerers
Planned use of SITC results	
Development during Project Time	Lab climatization improvement; 2nd lab to be realized Participation in CSITC RTs
Direct project support given by / (offered by)	CFC/ICAC/33 full support
Kind of direct support	Support to instrument /conditioning
Perspective / Comments	10% instrument testing; improving, extending

Region	East/Southern
Country	Zambia
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	40
Responsible Organisation for classification / testing	Cotton Board of Zambia
Other laboratories	Production companies
Resp. Org.: Laboratory installed	No
Laboratory operational	
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	Cotton Board installed Participation in CSITC RTs
Direct project support given by / (offered by)	-
Kind of direct support	
Perspective / Comments	

Region	East/Southern
Country	Sudan
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	60 → 11
Responsible Organisation for classification / testing	SCCL
Other laboratories	Research (ARC)
Resp. Org.: Laboratory installed	Yes
Laboratory operational	SCCL no ; ARC yes
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	Lab climatisation restoration (research lab testing for SCCL) Participation in CSITC RTs
Direct project support given by / (offered by)	CFC/ICAC/33 Support
Kind of direct support	Support to instrument /conditioning
Perspective / Comments	

Region	East/Southern
Country	Ethiopia
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	30
Responsible Organisation for classification / testing	None
Other laboratories	Governmental (Quality/Standardization)
Resp. Org.: Laboratory installed	No
Laboratory operational	
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	
Direct project support given by / (offered by)	
Kind of direct support	
Perspective / Comments	Discussions, no fixed strategy

Region	East/Southern
Country	Mozambique
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	22
Responsible Organisation for classification / testing	IAM
Other laboratories	Research
Resp. Org.: Laboratory installed	In progress
Laboratory operational	In progress
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	Implementation of 3 SITC laboratories (operational?)
Direct project support given by / (offered by)	CFC/ICAC/33 CFC/ICAC/37
Kind of direct support	Support to instrument /conditioning
Perspective / Comments	Implementing 100% instrument testing

Region	East/Southern
Country	Malawi
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	20
Responsible Organisation for classification / testing	None
Other laboratories	No
Resp. Org.: Laboratory installed	No
Laboratory operational	
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	
Direct project support given by / (offered by)	
Kind of direct support	
Perspective / Comments	

Region	East/Southern
Country	Uganda
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	18
Responsible Organisation for classification / testing	CDO
Other laboratories	No
Resp. Org.: Laboratory installed	Yes
Laboratory operational	(yes)
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	New SITC, new lab room, lab climatization improved Participation in CSITC RTs
Direct project support given by / (offered by)	CFC/ICAC/33
Kind of direct support	Support to instrument /conditioning
Perspective / Comments	

Region	East/Southern
Country	South Africa
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	9
Responsible Organisation for classification / testing	Cotton SA
Other laboratories	Control, processing
Resp. Org.: Laboratory installed	Yes
Laboratory operational	Yes
Current use of SITC results	Research, production improvement, marketing, processing
Planned use of SITC results	
Development during Project Time	Full routine operation given Participation in CSITC RTs
Direct project support given by / (offered by)	
Kind of direct support	
Perspective / Comments	

Region	East/Southern
Country	Kenya
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	7
Responsible Organisation for classification / testing	CODA
Other laboratories	No
Resp. Org.: Laboratory installed	In progress
Laboratory operational	
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	Lab installation, SITC installation
Direct project support given by / (offered by)	Offered by CFC/ICAC/33 CFC/ICAC/37
Kind of direct support	
Perspective / Comments	Preparing for full instrument testing (CFC/ICAC/33)

Region	East/Southern
Country	Madagascar, Burundi, Rwanda, Mauritius, Swaziland, Lesotho
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	Madagascar <7, Burundi 2, Rwanda 2, Swaziland <1, Lesotho <1, Mauritius 0
Responsible Organisation for classification / testing	Burundi: COGERCO; Swaziland: Swaziland Cotton Board
Other laboratories	Mauritius: governmental/processing; Lesotho: processing
Resp. Org.: Laboratory installed	
Laboratory operational	
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	
Direct project support given by / (offered by)	
Kind of direct support	
Perspective / Comments	



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WEST / CENTRAL AFRICA

Region	West / Central
Country	Burkina Faso
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	160
Responsible Organisation for classification / testing	SOFITEX
Other laboratories	No
Resp. Org.: Laboratory installed	Yes
Laboratory operational	Yes
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	New SITC, lab climatization improved Participation in CSITC RTs
Direct project support given by / (offered by)	Offered by CFC/ICAC/33
Kind of direct support	
Perspective / Comments	Implementation of instrument testing

Region	West / Central
Country	Mali
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	95
Responsible Organisation for classification / testing	CMDT – OCC
Other laboratories	Education, RTC
Resp. Org.: Laboratory installed	Yes
Laboratory operational	(yes)
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	Minor improvements Participation in CSITC RTs
Direct project support given by / (offered by)	Offered by CFC/ICAC/33 (UNIDO in 2005)
Kind of direct support	
Perspective / Comments	Implementation of instrument testing

Region	West / Central
Country	Benin
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	90
Responsible Organisation for classification / testing	AIC (SCQCC)
Other laboratories	No
Resp. Org.: Laboratory installed	Yes
Laboratory operational	Yes
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	Organisational restructuring completed
Direct project support given by / (offered by)	Offered by CFC/ICAC/33
Kind of direct support	
Perspective / Comments	Implementing instrument testing

Region	West / Central
Country	Côte d'Ivoire
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	61
Responsible Organisation for classification / testing	APROCOT-CI / CIDT
Other laboratories	Research
Resp. Org.: Laboratory installed	Rehabilitation of lab in process
Laboratory operational	No
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	SITC procured; lab improvement planned and pending
Direct project support given by / (offered by)	UNIDO current project (UNIDO in 2005)
Kind of direct support	
Perspective / Comments	

Region	West / Central
Country	Nigeria
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	58
Responsible Organisation for classification / testing	None
Other laboratories	Research
Resp. Org.: Laboratory installed	No
Laboratory operational	No
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	Participation in RTC trainings
Direct project support given by / (offered by)	Offered by CFC/ICAC/33
Kind of direct support	
Perspective / Comments	Existing instrument not operational

Region	West / Central
Country	Cameroon
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	52
Responsible Organisation for classification / testing	SODECOTON
Other laboratories	Processing
Resp. Org.: Laboratory installed	No
Laboratory operational	No
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	Participation in RTC trainings
Direct project support given by / (offered by)	Offered by CFC/ICAC/33
Kind of direct support	
Perspective / Comments	Concretely planning instrument testing

Region	West / Central
Country	Chad
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	31
Responsible Organisation for classification / testing	CotonTchad
Other laboratories	No
Resp. Org.: Laboratory installed	Yes
Laboratory operational	No
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	Participation in RTC trainings
Direct project support given by / (offered by)	Offered by CFC/ICAC/33
Kind of direct support	
Perspective / Comments	Existing instruments not operational

Region	West / Central
Country	Togo
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	15
Responsible Organisation for classification / testing	NSCT
Other laboratories	No
Resp. Org.: Laboratory installed	Yes
Laboratory operational	No
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	Participation in RTC trainings
Direct project support given by / (offered by)	Offered by CFC/ICAC/33 (UNIDO in 2005)
Kind of direct support	
Perspective / Comments	Existing instrument not operational

Region	West / Central
Country	Senegal
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	11
Responsible Organisation for classification / testing	SODEFITEX
Other laboratories	No
Resp. Org.: Laboratory installed	Yes
Laboratory operational	???
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	Lab climatization improved; SITC maintenance
Direct project support given by / (offered by)	CFC/ICAC/33 (UNIDO in 2005)
Kind of direct support	Support to instrument /conditioning
Perspective / Comments	

Region	West / Central
Country	Ghana
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	9
Responsible Organisation for classification / testing	(GCCL)
Other laboratories	Research
Resp. Org.: Laboratory installed	No
Laboratory operational	No
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	Participation in RTC trainings
Direct project support given by / (offered by)	Offered by CFC/ICAC/33
Kind of direct support	
Perspective / Comments	

Region	West / Central
Country	Central African Republic; Guinea (Rep.); Congo (DR); Niger
Annual Cotton Production, [1000t], (ICAC, Av. 07/08-09/10)	Central African Republic 4; Guinea (Rep.) 4; Congo (DR) 3; Niger 2
Responsible Organisation for classification / testing	Central African Republic: SOCADETTEX(?); Guinea (Rep.) CFC(?)
Other laboratories	
Resp. Org.: Laboratory installed	
Laboratory operational	
Current use of SITC results	
Planned use of SITC results	
Development during Project Time	
Direct project support given by / (offered by)	
Kind of direct support	
Perspective / Comments	

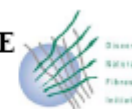
Publication of Participating Labs on icac.org and csitc.org



INTERNATIONAL COTTON ADVISORY COMMITTEE

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CSITC Round Trials

ARGENTINA

- Alpargatas Textil, S. A.
- INTA-EEA Saez Peña - Laboratorio de Fibra

AUSTRALIA

- Anscott Limited
- Australian Classing Services P/L
- Queensland Cotton Corp. Ltd.

BANGLADESH

- Square Textiles Ltd.

BRAZIL

- Algodoeira Petrovina
- BMA/FBOVESPA S.A.
- Centro de Análise de Fibras EBD/ABAPA
- Comfi e Companhia Catarinense de Fiação
- FBET—Fundação Blumenauense de Estudos Têxteis
- Kuhlmann Labs: Acreuna/ALCOTTON,
- Bahia ABAPA, Chapadão do Sul/AMPASUL,
- Rhoda Velha/ABAPA, Sapezal
- Minas Cotton (AMIPA)
- SGS do Brasil Ltda, Filial Rondonópolis MT
- Unicotou—Cooperativa de Produtores de Algodão

BURKINA FASO

- SOFITEX Laboratoire de Classement Coton

CHINA, PEOPLE'S REPUBLIC

- Shandong Technical Center for Inspection & Quarantine
- Uster Technologies (Suzhou) Co. Ltd.
- Xin Jiang Esquel Textile Company Ltd.

COLOMBIA

- Distribuidora de Algodón Nacional DIAGONAL

EGYPT

- Cotton Arbitration & Testing General Organization (CATGO)

FRANCE

- Cind PERSYST LTC

GERMANY

- Faserinstitut Bremen a.V. (FIBRE)

GREECE

- INA, S.A.
- K. B. Markou Abes
- NAGREF-Cotton and Industrial Plants Research Institute

INDIA

- Ahmedabad Textile Industry's Research Association (ATIRA)
- Cotton Association of India: CT&R Lab Akola, CT&R Lab Aurangabad, CT&R Lab Mumbai, CT&R Lab Rajkot
- SGS India Pvt Limited, Ahmedabad/Agri Laboratory
- Sporting Synthetics Ltd.
- Thiagarajar Mills (P) Ltd.
- U. B. Cotton Pvt. Ltd.
- Wakefield Inspection Services (India) Pvt. Ltd.: Mumbai Lab, Rajkot Lab

IRAN

- General Department of Cotton & Oil Seeds of Iran

ITALY

- Filartex s.p.a.

JAPAN

- Japan Spinners Inspecting Foundation



MALI

- CERFITEX, RTC West/Central

PAKISTAN

- Karachi Cotton Association

POLAND

- Gdynia Cotton Association Laboratory



SOUTH AFRICA

- Cotton South Africa
- Priila 2000 (Pty) Ltd

SPAIN

- Laboratorio Agroalimentario de Sevilla

SWITZERLAND

- Uster Technologies AG



TANZANIA

- Tanzania Bureau of Standards, RTC East/Southern

- Tanzania Cotton Board

- Wakefield Inspection Services Tanzania Ltd



UGANDA

- Cotton Development Organisation

UNITED KINGDOM

- International Cotton Association (ICA)

USA

- Cotton Incorporated/Product Evaluation Laboratory
- Fiber & Biopolymer Research Institute (Texas Tech University)
- Monsanto HVI Lab
- USDA, AMS Cotton Offices: S&E Cotton Program, Abilene TX, Corpus Christi TX, Dallas AR, Florence SC, Lubbock TX, Macon GA, Memphis TN, QA Branch, Visalia CA

- USDA, ARS, Cotton Quality Research Station, Clemson SC

- USDA ARS-SRRC, New Orleans LA

- Uster Technologies, Inc.

UZBEKISTAN

- SGS Tashkent Ltd.
- Uzbek Centre SIFAT Regional Labs: Andijan, Bukhara, Jizzakh, Karakalpak, Karghi, Khorezm, Namangan, Navoi, Samarqand, Surkhondaryo, Tashkent



- Wakefield Inspection Services (Tashkent) Ltd



ZAMBIA

- Dumeavent (Zambia) Limited



ZIMBABWE

- Cotton Company of Zimbabwe

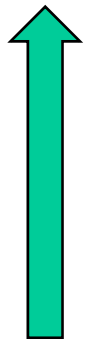
African Participation in CSITC RTs

	2007	2008	2009	2010	2011
Labs	8	11	9	12	14
Instr. (paral.)	13	16	12	16	?
Countries	6	8	7	8	9
Countries	Benin Egypt South Afr. Tanzania Zambia Zimbabwe	Benin Egypt Kenya South Afr. Sudan Tanzania Zambia Zimbabwe	Egypt Mali South Afr. Tanzania Uganda Zambia Zimbabwe	Burkina Faso Egypt Mali South Africa Tanzania Uganda Zambia Zimbabwe	Burkina Faso Egypt Mali South Africa Sudan Tanzania Uganda Zambia Zimbabwe

African Lab Evaluation Results in CSITC RT

Evaluation

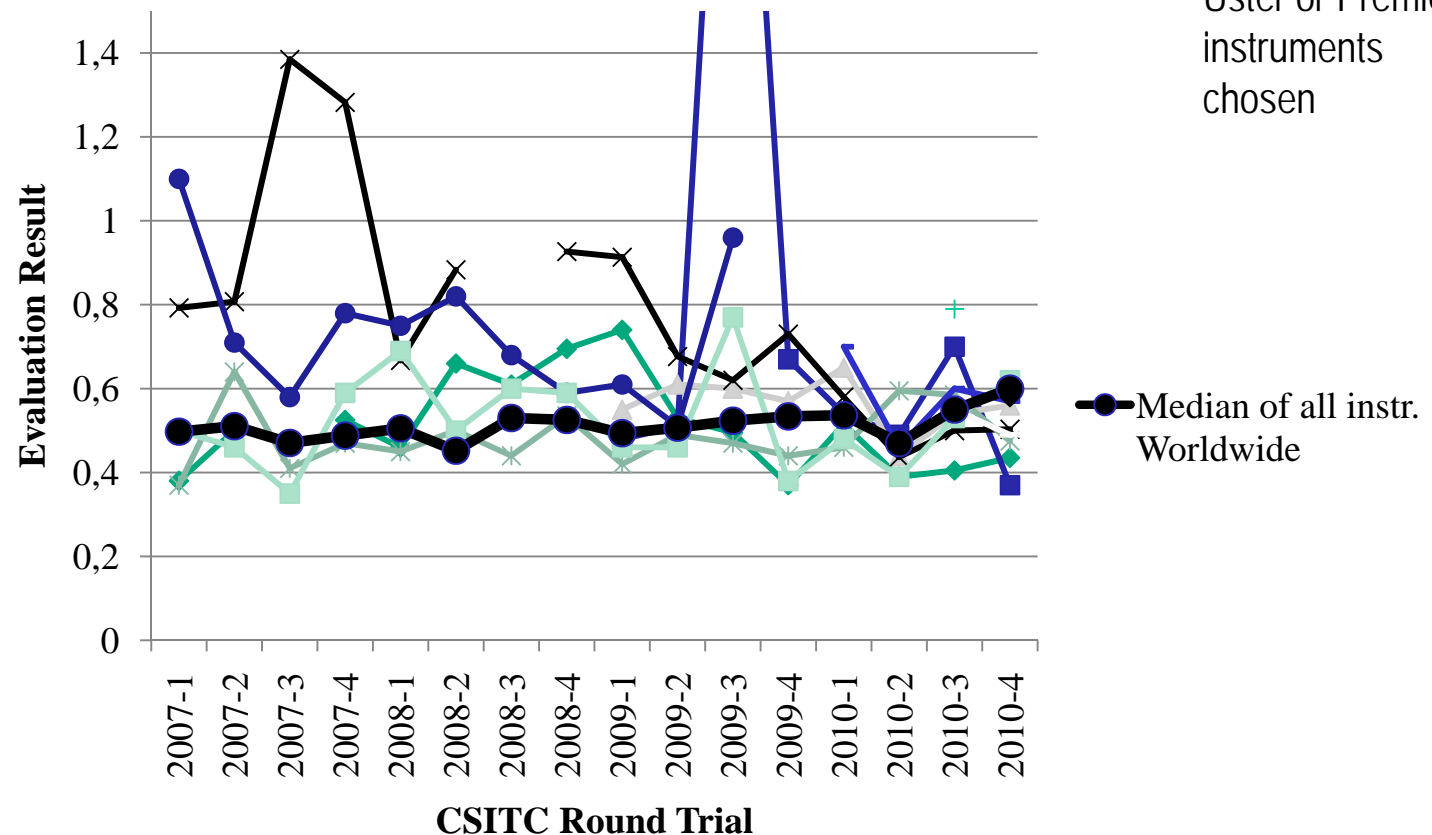
Worse
performance



Best
performance

All African Laboratories in Comparison to Median of all Labs worldwide

Only labs with
Uster or Premier
instruments
chosen

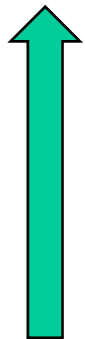


There is a trend that the African labs are getting better and closer together

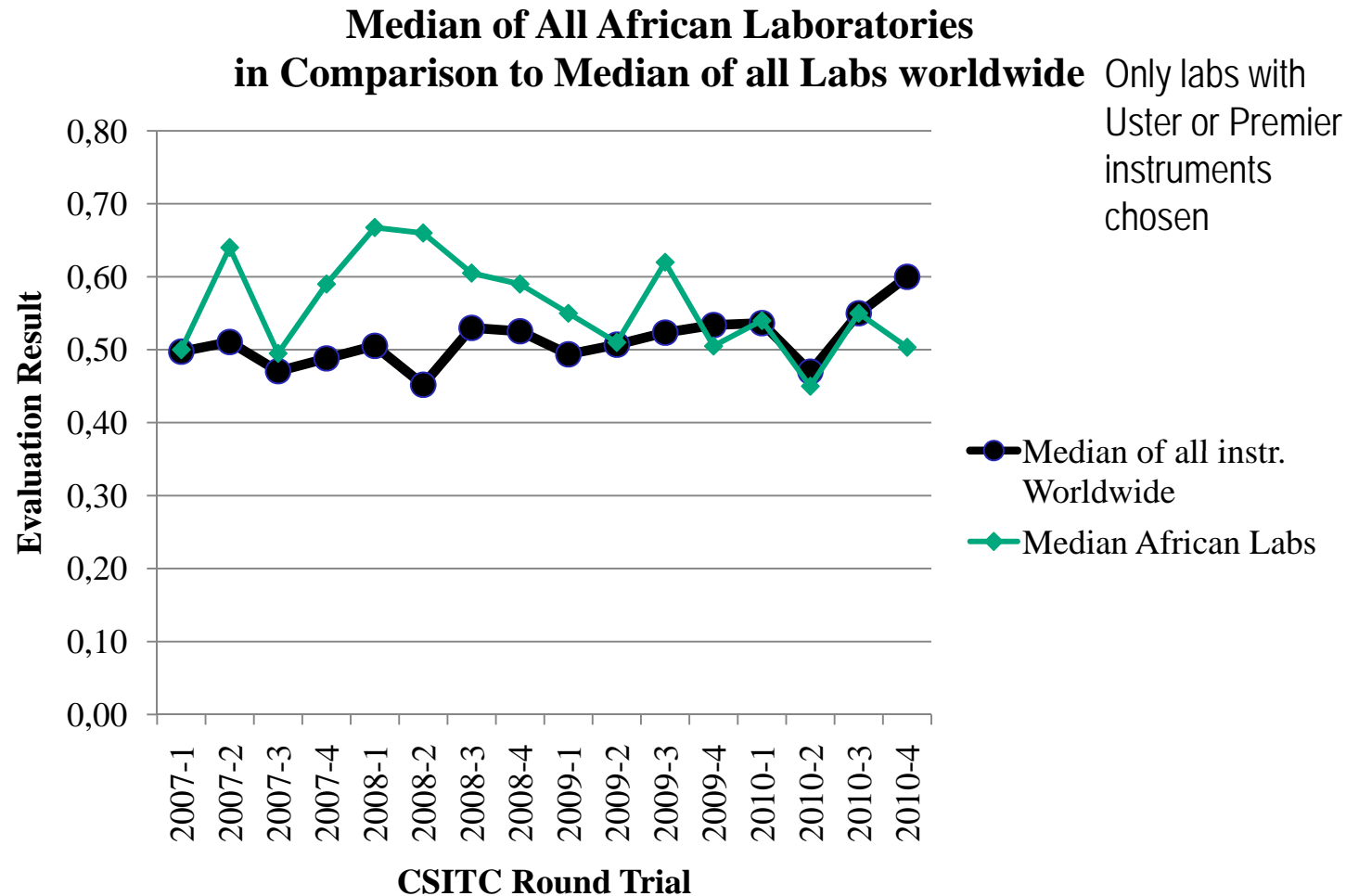
African Lab Evaluation Results in CSITC RT

Evaluation

Worse
performance



Best
performance



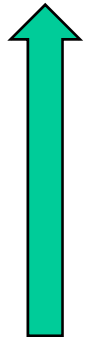
It is clearly visible that the African labs are getting better

Development of one Exemplary Lab: Evaluation Results in CSITC RTs

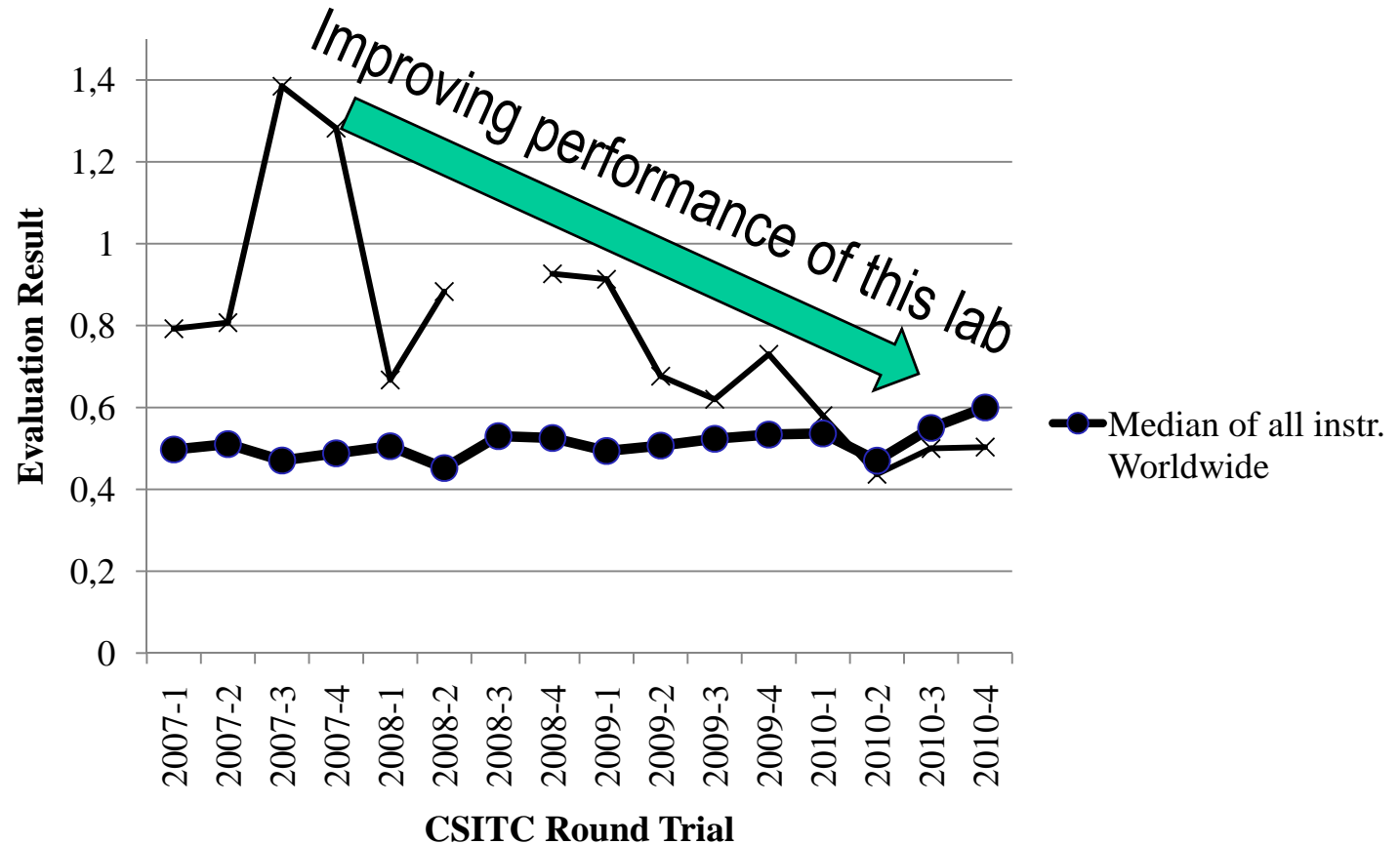
African Laboratory "A" in comparison to Median of all Labs

Evaluation

Worse
performance



Best
performance

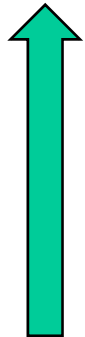


This lab improved strongly based on the CSITC support and through RT evaluation info

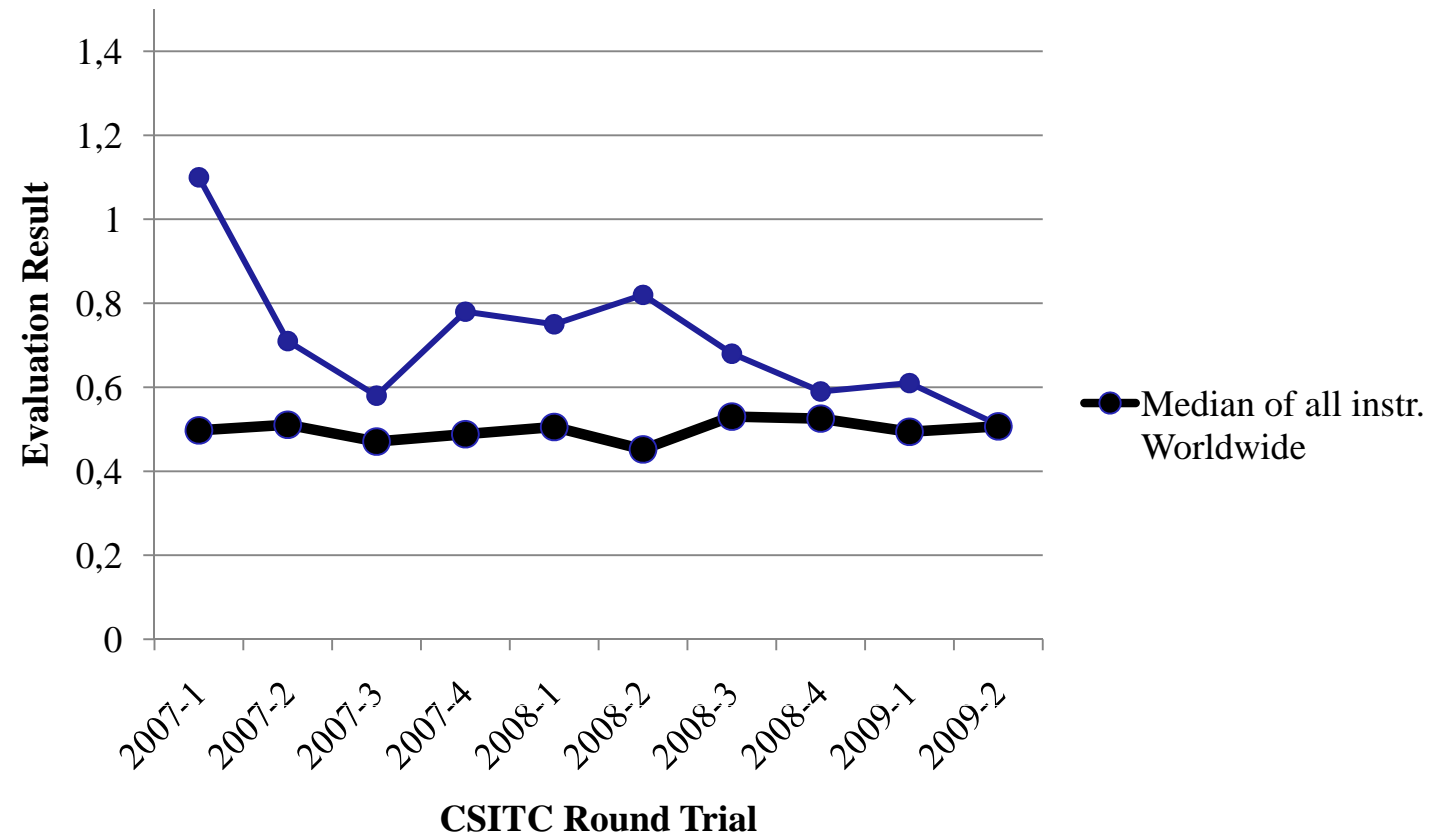
African Laboratory "B" in Comparison to Median of all Labs

Evaluation

Worse
performance



Best
performance

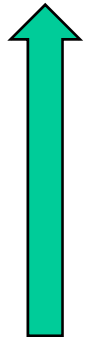


This lab improved strongly, too

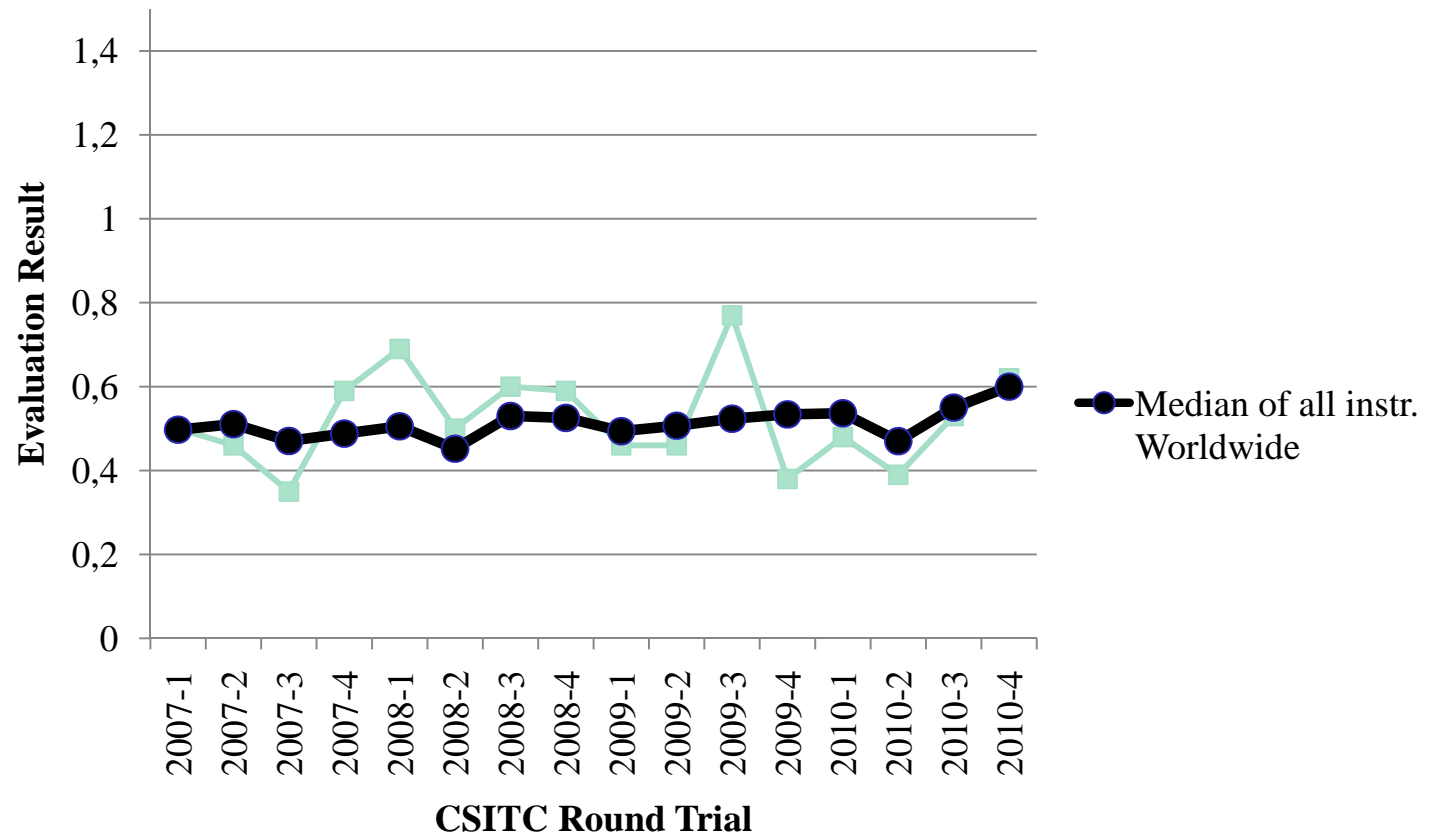
African Laboratory "C" in Comparison to Median of all Labs

Evaluation

Worse
performance



Best
performance



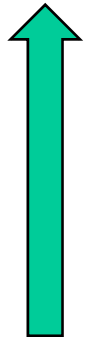
This lab proofed to be performing „on average“ all the time

African Lab Evaluation Results in CSITC RT

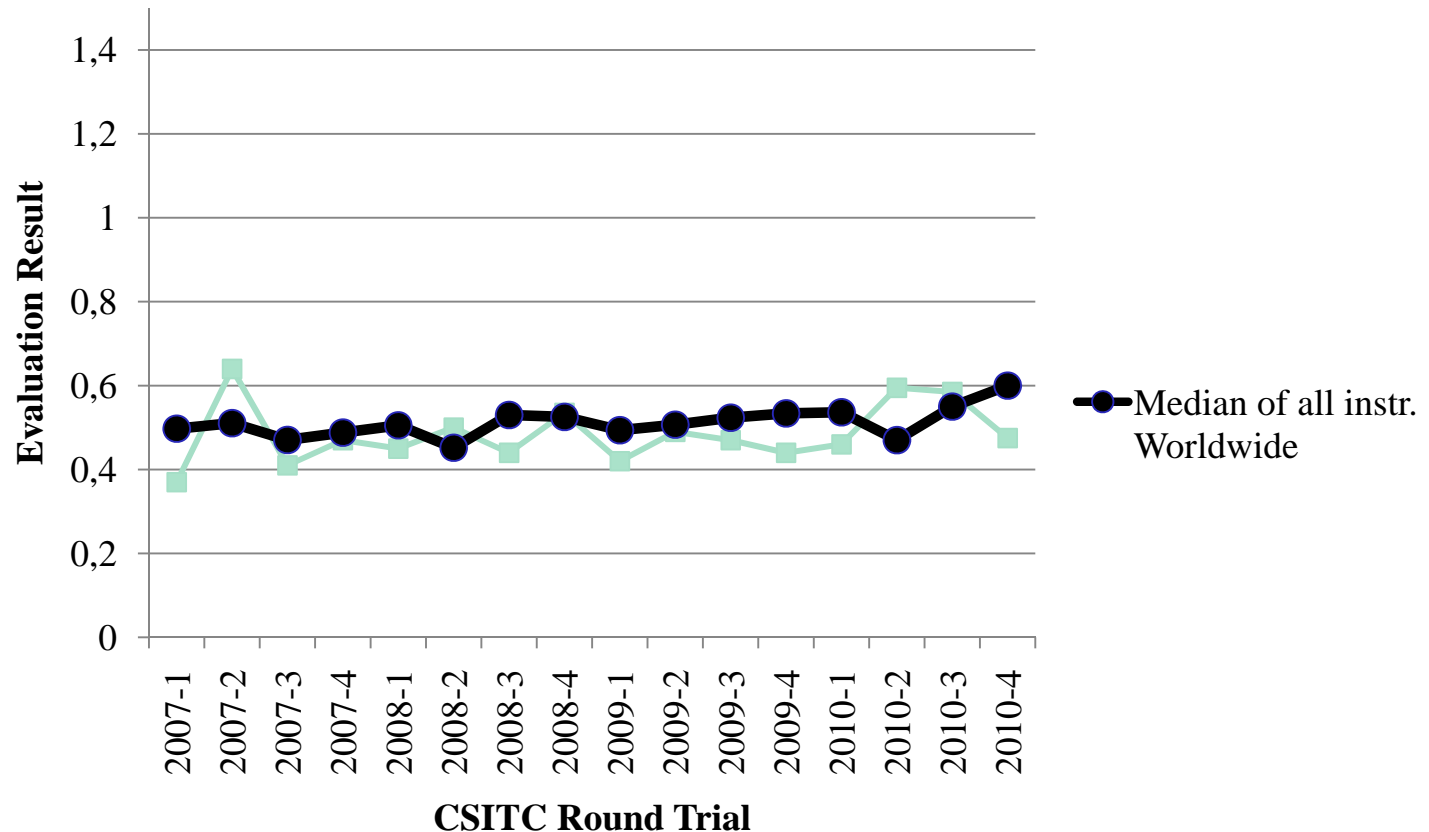
African Laboratory "D" in Comparison to Median of all Labs

Evaluation

Worse
performance



Best
performance



This lab proofed to be performing „better than average“ - nearly all the time,
Belonging to the 50% of the best labs worldwide

Summary of Developments

Question: What is the current status of instrument testing in the cotton production regions in Africa?

- Status: In at least 10 countries labs are installed and operational
- Development
 - In at least 10 countries there are intense developments / investments for installing / improving instrument testing
- In 9 countries labs are checking/prooving their performance in the global CSITC Round Trials. Laboratory ratings are improving.
- Are the developments solely initiated by this project?
 - In all countries, the responsible organizations started improving on their own planning and costs
- Is instrument testing assisted by this project?
 - In several countries the necessary prerequisites were given for giving full support for improving instruments/climatization. All countries got at least small support.
- The RTCs will be supporting the developments in the countries.

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Thank you for your kind attention !

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